DEFENSE SYSTEMS MANAGEMENT COLLEGE

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INTRODUCTION TO
DEFENSE ACQUISITION MANAGEMENT

Wilbur D. Jones, Jr.

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INTRODUCTION TO DEFENSE ACQUISITION MANAGEMENT

A Pamphlet Prepared by

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for the

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Fort Belvoir, Virginia

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The Defense Systems Management College publishes several handbooks and guides that address specific program management disciplines. They are--

A Cybernetic Model for the Proactive Organization
Acquisition Strategy Guide
Congressional Involvement and Relations Guide
Cost Realism
Defense Manufacturing Management Guide
Designing Quality Into Defense Systems
A Program Office Guide to Technology Transfer
Establishing Competitive Production Sources
Evolutionary Acquisition an Alternative
Strategy for Acquiring Command and Control (C^2) Systems
Glossary Defense Acquisition Acronyms and Terms
Guide for the Management of Multinational Programs
Integrated Logistics Support Guide
Integrating Industrial Preparedness Into the Acquisition Process
Joint Logistics Commander's Guide for the Management of Joint Service Programs
Lessons Learned: M1 Abrams Tank System (1983)
Lessons Learned: Advanced Attack Helicopter (1983)
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FOREWORD

Department of Defense (DOD) acquisition, acquiring weapon systems and equipment in support of national security, is, perhaps, more visible than any activity of the U.S. Government and subject to a corresponding amount of comment and criticism.

Granted, the defense acquisition process is complicated.

Understanding the basics of how it works is not.

On the whole, the defense aquisition process performs well, considering the number of people involved, the vast checks and balances and the potentially high risks and problems which must be solved. There is immense pressure to complete work on schedule, at the least expense to the government and, most importantly, have the systems operate as planned.

Defense acquisition is the biggest single business in the world. Figures for fiscal 1988 approach $190 billion. This fact begs our appreciation and understanding of how the process works.

Fundamentally, defense acquisition is guided by certain authority and policies. The management of systems developed within the process consists of two subprocesses through which system approval and funding are attained. The process generates business and technical decisions, and is administered directly by **one** person - the program manager - whose **only** job is to develop and produce that system.

There is one constant, and that is change—people, positions and procedures. There are changes in guidance and direction from the Congress or senior administration officials which may result in less money or re-evaluation of requirements, and changes responding to continuous feedback to "make it better," reform the process, preclude mistakes, or emphasize areas uncovered.

Keeping up with the process is a major undertaking.

These are reasons why this pamphlet has been prepared for you. This is a quick study to refresh the skilled and experienced person and to introduce and enlighten the newcomer. We have focused on DOD-wide applications rather than on details of how a specific weapon system program is managed.

An important adjunct to this pamphlet is the publication, *Glossary: Defense Acquisition Acronyms And Terms*, published by the Defense Systems Management College (DSMC) and available on request. Other available DSMC acquisition publications of possible interest are listed at the beginning of the pamphlet.

For further information on defense acquisition, write the Defense Systems Management College, Fort Belvoir, Virginia 22060-5426.

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BASICS OF DEFENSE ACQUISITION MANAGEMENT

A basic understanding of defense acquisition begins with definitions and applications. The defense acquisition system is:

> A single uniform system whereby all equipment, facilities, and services are planned, developed, acquired, maintained and disposed of within the Department of Defense (DOD). The system entails establishing policies and practices that govern acquisitions, determining and prioritizing resource requirements, directing and controlling the process, contracting, and reporting to Congress.

Stated another way:

SYSTEM	ACQUISITION	MANAGEMENT
Weapon hardware and software and structure	Something (product service) to be acquired As opposed to: Doctrine or tactics change or equipment modification	Planning Organizing Programming Directing Controlling Reporting

The defense acquisition system acquires weapon systems and other items used by the armed forces to meet threats to national security. Development and production of a new weapon system follows a path similar to new consumer product, which basically is:

Non-weapon items and services acquired by the DOD like studies, passenger vehicles, supplies, construction **and** waste removal are "acquired" and, thus, part of the acquisition process, governed by appropriate directives and regulations. This pamphlet applies to these items and services as well as weapons.

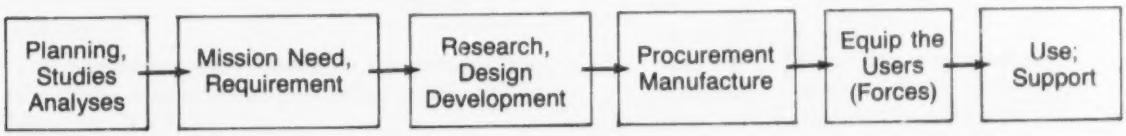
However, the term "defense acquisition" generally applies only to weapon systems processes, procedures and end-products.

A "weapon system" is used by the armed forces to "warfight." It includes all equipment and systems used by a combatant command; i.e., trucks, trailers, radios, etc., as well as ordnance, guns and the like to perform a specified function or meet a mission need.

"Acquisition" includes research, development, test and evaluation, production, procurement and operations and support. The word "procurement," which is "the act of buying goods and services for the government," is sometimes misidentified as being synonymous with "acquisition."

Participants in Defense Acquisition

Three participants (players) in defense acquisition are the Executive Branch of the Federal Government, the Legislative Branch and Industry (defense contractors). Each has a significant role and perspective.



DEPARTMENT OF DEFENSE

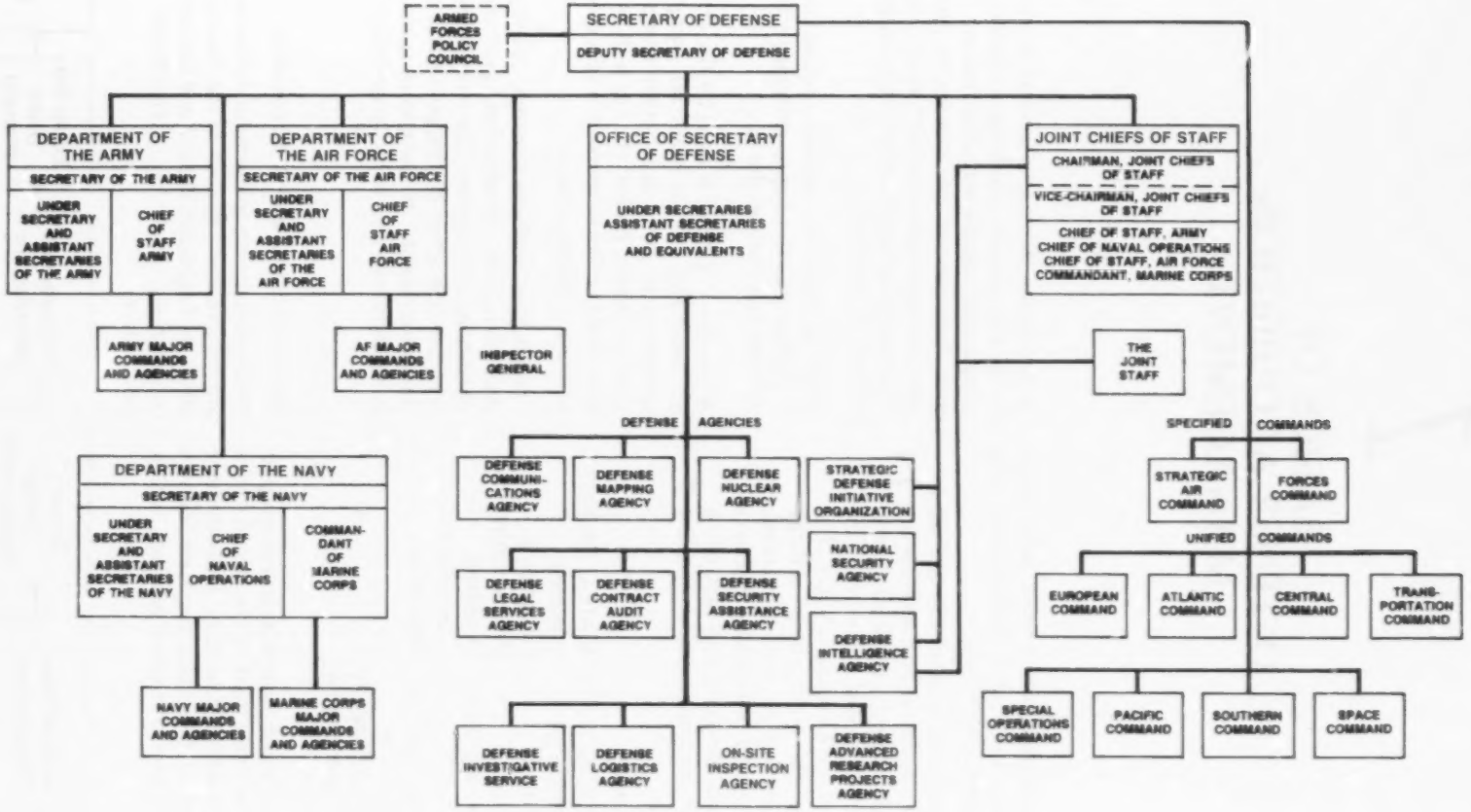


FIGURE 1

Executive Branch

The principal players within the Executive Branch include the President, the Department of Defense (DOD), the Office of Management and Budget (OMB), the Department of State and the National Security Council (NSC).

—PERSPECTIVE

Formulate, direct, execute national security policy

—ROLES

Define requirement
Manage development of solution
Employ the solution
Support fielded system

—OBJECTIVES

Maximize cost-benefits
Produce capable systems on time
Meet allied considerations and requirements
Eliminate fraud and waste

Legislative Branch

The Legislative Branch (the Congress) includes the "Defense Committees": the Senate and House Armed Services Committees and the Defense Appropriations Subcommittees of the Senate and House Appropriations Committees; the Senate and House Budget Committees; other committees having legislative oversight of defense activities; individual Members of the Congress; the Congress as a body; the Congressional Budget Office and the General Accounting Office.

—PERSPECTIVES

Represent interests of their constituents
Pass legislation

—ROLES

Authorize weapon systems
Provide public funds
Oversee acquisition process
Decide how much defense is enough

—OBJECTIVES

Balance defense/social spending
Distribute funds "fairly"
Control public debt
Eliminate "excess" profits
Maximize competition
Promote health of industry
Eliminate fraud, waste, mismanagement

Industry

The defense industry (contractors) includes large and small organizations providing goods and services to DOD.

—PERSPECTIVES

Represent interests of the owners or stockholders

—ROLES

Propose solutions to defense problems
Design the system
Produce the system
Deliver the system

—OBJECTIVES

Provide reasonable return for risk taken
Ensure market share
Promote long-term growth and stability
Achieve technological development for future competitive advantages

The Acquisition Environment

Innumerable external factors impact on, and help shape, every major defense acquisition program, creating an environment no one person controls. Often, these factors work at diametric purposes. They represent stimuli, currents and hurdles swirling around and through the acquisition process as a whole, or any one program in particular. Many of these same factors influence small programs in varying degrees.

These factors include forces, policies, decisions, regulations, reactions and emergencies. They are best characterized as an "awareness check list"--not all negative, not all constructive, but worthy of serious consideration. Understanding and dealing with the environment they create is one of the severest challenges to defense acquisition managers.

Executive Branch factors include:

Energy (Energy Department)
Budget (OMB)
Mission requirements (Joint Chiefs of Staff)
Program reviews (Office of the Secretary of Defense)
Political (The White House)
Foreign policy (State Department)
Socioeconomic (Small Business Administration, Labor Department)
Personnel (Office of Personnel Management)
Program cost (Service headquarters)
Systems performance (User activities)
Ethics and conduct (On all accounts).

Legislative Branch factors include:

Authorizing programs - the approval
Appropriations - the funds
Oversight (sometimes viewed as "micromanagement"
Constituent demands and requests
Verify, justify the program's need
Lobbyists' influence
Requests for information
Politics.

Industry factors include:

Design and test problems
Contract requirements
Delivery schedules
Defects and quality
Labor problems
Subcontractors
Interrelationships with counterparts
Lines of communications
Profit and investment motivations
Ethics and conduct.

There are other external factors like the media, public sentiment and emotions, world opinion and the omnipresent "threat" to national security.

The Authority for Systems Acquisition

The framework granting authority for DOD to conduct systems acquisition to develop, produce and field weapon systems emanates from four sources. They are the law (legal basis), executive direction, OMB Circular A-109 and the Federal Acquisition Regulation (FAR).

The framework guides and grants authority, enables the DOD to conduct business and is the apparatus for decision-making and execution. It restricts and controls, principally by limitation rather than by consent, and is complex and dynamic, often confusing and contradictory.

The Law

Statutory authority from the Congress provides the legal basis for systems acquisition. Some of the prominent laws are:

Armed Services Procurement Act (1947), as amended, the original law, now essentially replaced by subsequent legislation
Small Business Act (1963), as amended
Office of Federal Procurement Policy Act (1983), as amended
Competition in Contracting Act (1984)
DOD Procurement Reform Act (1985)
DOD Reorganization Act of 1986
Annual authorization and appropriations legislation, which in recent years have contained substantial new or amended statutory requirements.

Executive Direction

Authority and guidance also emanate from the Executive Branch in the form of Executive Orders (EOs) and National Security Decision Directives (NSDDs) from the President and regulations from cabinet departments and other federal agencies. Examples are:

-E.O. 12352 (1982), which directed procurement reforms and establishment of the FAR;
-NSDD 219 (1986), which directed implementation of recommendations of the President's Blue Ribbon (Packard) Commission on Defense Management;
-Small Business Administration, for small business set-aside contracts;
-Labor Department, for equal employment opportunity and wage rates;
-Federal Aviation Administration, for aviation regulations; and
-OMB, for the Office of Federal Procurement Policy (OFPP).

OMB Circular A-109

As the President's chief administrative manager for the Federal Government, OMB issued this directive in 1976. It defines the system acquisition process as "a sequence of acquisition activities starting from the agency's mission needs, with its capabilities, priorities and resources (dollars), extending through introduction into use or successful achievement of program objectives."

A-109 sets the basic acquisition policy for federal agencies, particulary for major programs (defined in Section Two), which includes the requirements to:

—Express needs and objectives in mission terms
—Emphasize competitive exploration of alternative system design concepts
—Communicate with the Congress early
—Establish clear lines of management authority, and designate a program manager for each major program

—Designate an agency acquisition focal point
—Avoid a premature commitment to full-scale development and production.

Federal Acquisition Regulation

The FAR is the primary regulation for use by all federal agencies for acquisition of supplies and services with appropriated funds. The document, published in 1984, consolidated the major procurement regulations of various departments and agencies. The intent was to standardize content and decrease the volume for consistency throughout government. The principal agencies involved in putting together the FAR were DOD, the General Services Administration and the National Aeronautics and Space Administration, the three largest buyers.

The FAR is broader than just contracting and applies to all goods and services. It directs the defense program manager in many ways, including contract award procedures, acquisition planning, warranties and establishing guidelines for competition.

Besides the FAR, each agency has its supplement to describe its own particular ways of doing business. The DOD supplement is called DFARS (Defense FAR Supplement).

Successful Acquisition Program

A successful weapon system acquisition program places a capable and supportable weapon in the hands of a user when and where it is needed, and does so within affordable resources. The ideal outcome necessary for successful long-term relationships among the three participants is "Win-Win," wherein each gains something of value for participating.

2

DEPARTMENT OF DEFENSE ACQUISITION POLICY

The principal Department of Defense policy directives guiding defense acquisition are:

DOD Directive 5000.1 (Major and Non-Major Defense Acquisition Programs), the policy directive, and its companion,

DOD Instruction 5000.2 (Defense Acquisition Program Procedures), which implements this policy.

This pamphlet reflects the September 1, 1987, versions of both directives. Related major policy directives are DOD Directive 5134.1 (Under Secretary of Defense (Acquisition)), February 10, 1987, and DOD Directive 5000.49 (Defense Acquisition Board), September 1, 1987.

Defense Acquisition Policy

The DOD Directive 5000.1 establishes policies, practices and procedures which govern the acquisition of major and non-major defense acquisition programs. It further:

—Requires defense systems acquisition to be carried out efficiently and effectively to achieve operational objectives of U.S. armed forces in support of national policies.

—Requires management responsibility to be decentralized, except for specific decisions by the Secretary of Defense (SECDEF).

—Designates key decision-makers: The Defense Acquisition Executive, the Service Acquisition Executives, Program Executive Officers and Program Managers.

—Defines a major defense acquisition program as one that is not a highly sensitive classified program as designated by the SECDEF and:

—Is designated as a major program by the SECDEF because of urgency of need, development risk, joint funding, significant congressional interest or other considerations, or

—Is estimated by the SECDEF to require an eventual total expenditure for research, development, test and evaluation of more than $200 million, or for procurement of more than $1 billion, both figures based on fiscal 1980 constant dollars;

—(All other programs are called "non-major" and normally are managed within the Services and Defense Agencies.)

—Establishes the following management principles:

--Support national policy and operational objectives

—Streamline the acquisition organization

—Continually analyze mission areas

—Validate requirements for any new acquisition program and assess alternatives.

—Consider common-use solutions

—Assess affordability

—Enhance program stability

—Consider the industrial base

—Consider cooperative efforts with allies

—Tailor acquisition phases to minimize acquisition time and life-cycle costs, consistent with urgency and technical risks.

—Directs that management principles shall also be applied to non-major defense acquisition programs.

—Establishes a major defense program as either a Defense Acquisition Board (DAB) program or Component (Military Department - Service - or Defense Agency) program, and establishes milestone decision categories in which program progress is reviewed and decisions made. It further establishes:

—Milestone decision points and phases of the acquisition life-cycle process

—The DAB structure for major program reviews.

—Establishes principal policy considerations during program formulation, review and decision-making, including decision documentation, program baselines, program stability, affordability, industrial base considerations and strength, cooperative (allied) efforts, acquisition strategy, mission areas assessments, requirements validations, alternatives to new development, commonality and a streamlined acquisition organization.

—Establishes acquisition responsibilities of the senior DOD management officials noted above, along with the heads of DOD components and the Vice Chairman of the Joint Chiefs of Staff (JCS).

The DOD Instruction 5000.2, companion to DODD 5000.1, primarily deals with the DAB procedures, process, requirements and documentation for weapon systems.

3

DEFENSE ACQUISITION MANAGEMENT ORGANIZATION

The Secretary of Defense (SECDEF) has responsibility for the defense acquisition system. He delegates responsibility to the Under Secretary of Defense (Acquisition), USD(A).

The Under Secretary of Defense (Acquisition)

The position of the USD(A) was established within the Office of the Secretary of Defense on Sept. 30, 1986, resulting in a major reorganization of defense acquisition management. Refer to Figure 2.

In meeting the intent of the Congress and the Packard Commission, the USD(A) has policy and procedural authority for the defense acquisition system.

> The USD(A) is the principal acquisition official of the Department and is the acquisition advisor to SECDEF. In this capacity the USD(A) serves as the Defense Acquisition Executive (DAE), the Defense Procurement Executive and the National Armaments Director, the last regarding matters of the North Atlantic Treaty Organization (NATO).

For acquisition matters, the USD(A) takes precedence over the Secretaries of the Services after the SECDEF and Deputy SECDEF.

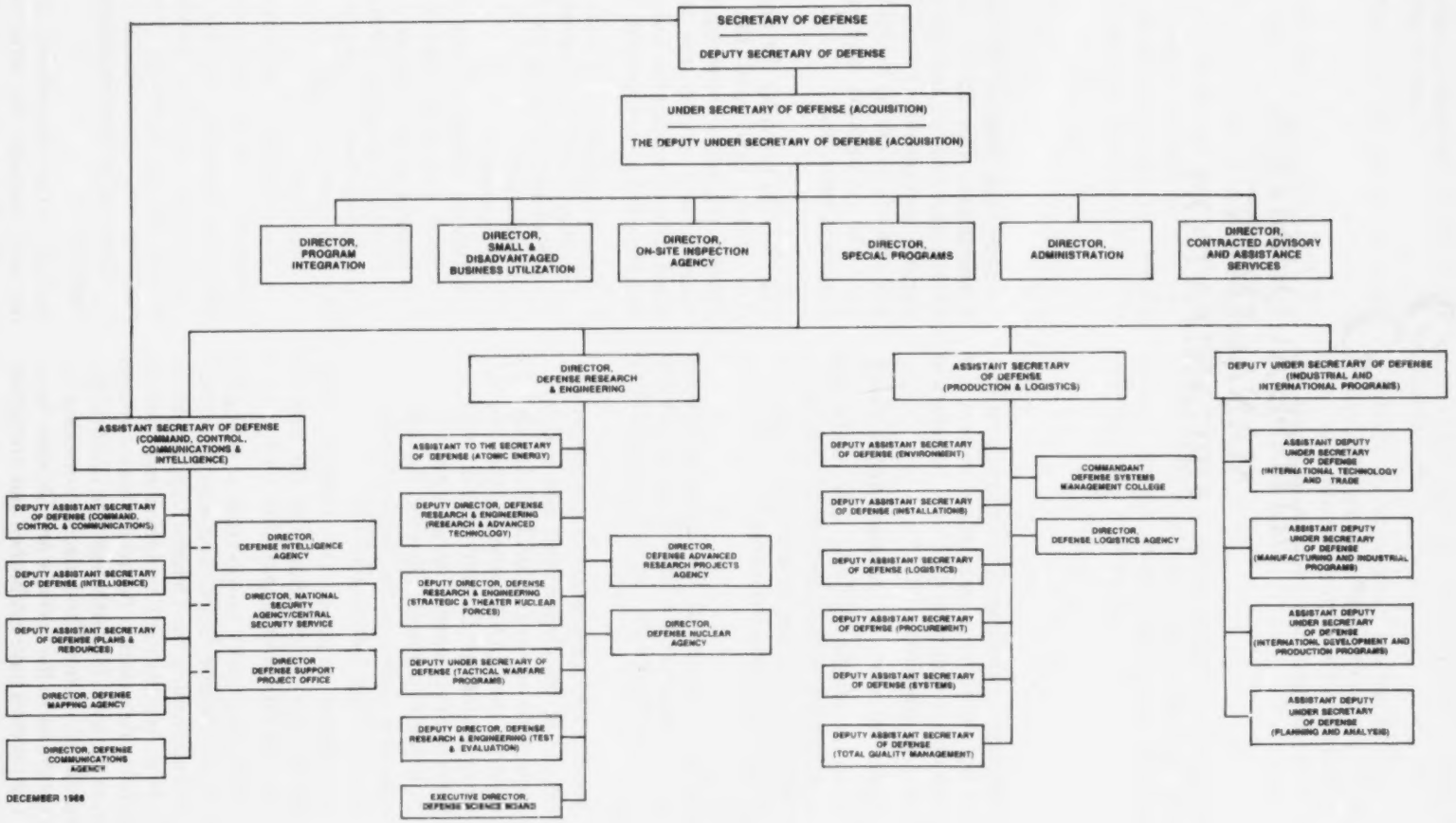
The USD(A) authority ranges from directing the Services and Defense Agencies on acquisition matters, to establishing the Defense Supplement to the Federal Acquisition Regulation and chairing the Defense Acquisition Board for major system program reviews. Nevertheless, the USD(A) has decentralized reviews and decision-making on most programs to the Services and Defense Agencies. The Services have established and strengthened acquisition organizations and processes to meet the same basic intent of the Congress and Packard Commission. This decentralization reflects the basic organizational and operational structure of defense acquisition. Overall Department policy and procedures are set in OSD. Requirements are set and programs are executed in the Services/Agencies.

The USD(A) provides the organizational structure within OSD and the Department-wide policies regarding how equipment, facilities, materiel, and services are developed and procured. This determination and attendant oversight includes, but in not limited, to:

—Accommodation of mission needs
—Research and development (R&D)
—Development testing and evaluation (DT&E)
—Production
—Procurement
—Defense industrial base and mobilization
—Small and small-disadvantaged business
—Regulatory procedures.
—Programs affecting international acquisition, strategic and theater nuclear forces, tactical warfare and atomic energy
—Munitions
—Total qualtiy management
Command, control, communications and intelligence acquisition matters
—Logistics, including facilities, transportation, safety, the environment, standardization and readiness and sustainability
—Disposal of obsolete equipment or hazardous materials.

Included is the responsibility to establish policies for and manage the structure and processes through which acquisition decisions are made and

OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR ACQUISITION


SECRETARY OF DEFENSE
DEPUTY SECRETARY OF DEFENSE
UNDER SECRETARY OF DEFENSE (ACQUISITION)
THE DEPUTY UNDER SECRETARY OF DEFENSE (ACQUISITION)
DIRECTOR, PROGRAM INTEGRATION
DIRECTOR, SMALL & DISADVANTAGED BUSINESS UTILIZATION
DIRECTOR, ON-SITE INSPECTION AGENCY
DIRECTOR, SPECIAL PROGRAMS
DIRECTOR, ADMINISTRATION
DIRECTOR, CONTRACTED ADVISORY AND ASSISTANCE SERVICES
ASSISTANT SECRETARY OF DEFENSE (COMMAND, CONTROL, COMMUNICATIONS & INTELLIGENCE)
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DIRECTOR, DEFENSE COMMUNICATIONS AGENCY
DIRECTOR, DEFENSE INTELLIGENCE AGENCY
DIRECTOR, NATIONAL SECURITY AGENCY/CENTRAL SECURITY SERVICE
DIRECTOR DEFENSE SUPPORT PROJECT OFFICE
DECEMBER 1988
DIRECTOR, DEFENSE RESEARCH & ENGINEERING
ASSISTANT TO THE SECRETARY OF DEFENSE (ATOMIC ENERGY)
DEPUTY DIRECTOR, DEFENSE RESEARCH & ENGINEERING (RESEARCH & ADVANCED TECHNOLOGY)
DEPUTY DIRECTOR, DEFENSE RESEARCH & ENGINEERING (STRATEGIC & THEATER NUCLEAR FORCES)
DEPUTY UNDER SECRETARY OF DEFENSE (TACTICAL WARFARE PROGRAMS)
DEPUTY DIRECTOR, DEFENSE RESEARCH & ENGINEERING (TEST & EVALUATION)
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DEPUTY ASSISTANT SECRETARY OF DEFENSE (INSTALLATIONS)
DEPUTY ASSISTANT SECRETARY OF DEFENSE (LOGISTICS)
DEPUTY ASSISTANT SECRETARY OF DEFENSE (PROCUREMENT)
DEPUTY ASSISTANT SECRETARY OF DEFENSE (SYSTEMS)
DEPUTY ASSISTANT SECRETARY OF DEFENSE (TOTAL QUALITY MANAGEMENT)
COMMANDANT DEFENSE SYSTEMS MANAGEMENT COLLEGE
DIRECTOR, DEFENSE LOGISTICS AGENCY
DEPUTY UNDER SECRETARY OF DEFENSE (INDUSTRIAL AND INTERNATIONAL PROGRAMS)
ASSISTANT DEPUTY UNDER SECRETARY OF DEFENSE (INTERNATIONAL TECHNOLOGY AND TRADE)
ASSISTANT DEPUTY UNDER SECRETARY OF DEFENSE (MANUFACTURING AND INDUSTRIAL PROGRAMS)
ASSISTANT DEPUTY UNDER SECRETARY OF DEFENSE (INTERNATIONAL DEVELOPMENT AND PRODUCTION PROGRAMS)
ASSISTANT DEPUTY UNDER SECRETARY OF DEFENSE (PLANNING AND ANALYSIS)

FIGURE 2.

implemented. In addition, oversight and evaluation of acquisition policies and programs ensure they are carried out effectively, efficiently and consistently throughout DOD and are achieving the Department's objectives.

This consolidation of responsibility with the USD(A) is facilitating implementations of a host of improvements to the acquisition system, including enhanced coordination and cooperation among OSD, the OJCS and the Services and Defense Agencies, providing for flexible, responsive strategic direction by OSD.

Organization of the Office of the USD(A)

The Office of the USD(A), OUSD(A), is organized around functional areas of services, R&D, and material acquisition. Seven OSD organizational elements report to the USD(A):

—Director, Defense Research and Engineering (DDR&E)

—Assistant Secretary of Defense (Command, Control, Communications and Intelligence) (C3I), for acquisition matters

—Assistant Secretary of Defense (Production and Logistics) (ASD(P&L))

—Assistant to the Secretary of Defense (Atomic Energy)

—Director, Program Integration (PI)

—Director, Small and Disadvantaged Business Utilization (SADBU)

—Executive Director, Defense Science Board (DSB).

Additionally, the Commandant of the Defense Systems Management College (DSMC) and the Directors of the following Defense Agencies report to the USD(A):

—Defense Advanced Research Projects Agency (DARPA)

—Defense Communications Agency (DCA)

—Defense Logistics Agency (DLA)

—Defense Mapping Agency (DMA)

—Defense Nuclear Agency (DNA)

—On-Site Inspection Agency (OSIA).

The Defense Acquisition Board

The Defense Acquisition Board (DAB) monitors and reviews the approximately 100 major weapon system programs. Organized in 1986, it replaced the former Defense Systems Acquisition Review Council and Joint Requirements and Management Board processes. It consists of senior OSD and appropriate Service/Defense Agency acquisition officials. The USD(A), as the DAE, chairs the DAB. The Vice Chairman of the JCS is Vice Chairman of DAB.

(Understanding the DAB organization and process facilitates understanding of how similar organizations and processes work within the Services and Defense Agencies.)

The DAB holds formal program reviews at all Milestones to assess Service execution of the previous phase, and readiness to proceed to the next. It advises and recommends to the SECDEF a "go-no go" decision to proceed to the following phase of development or production.

The DAB is supported by 10 review committees of OSD officials which evaluate programmatic and budgetary details for programs requiring milestone decision. These committees are organized around certain disciplines and warfare areas. They conduct periodic program reviews between milestones, analyze potential program difficulties in time to help control costs, measure progress and make recommendations to the DAB. The committees are:

Science and Technology
Nuclear Weapons
Strategic Systems
Conventional Systems
C31 Systems Committee
Test and Evaluation
Production and Logistics
Installations Support and Military Construction
International Programs
Policy and Initiatives

The DAB comprises OSD's "corporate vice presidents" on acquisition program issues. It does not provide or recommend funds, or vote on matters before it but, rather, attempts to reach consenus for recommendations on each program being reviewed. Through the DAE, the DAB recommends a decision to the SECDEF, who makes the ultimate program decision.

The DAB ensures OSD plays its oversight role in the defense acquisition system by offering early and in-depth direction. During the requirements process and front-end of the R&D phases, the DAB assesses possible tradeoffs among costs, schedule, performance and logistics support to obtain maximum benefit for the dollars spent. It then evaluates how this new system enhances our military forces' deterrent or warfighting capability.

Members of the DAB are:

USD (A), Chairman
Vice Chairman JCS, Vice Chairman
Service Acquisition Executives (SAEs) — Army, Navy, Air Force
Assistant Secretary of Defense (Comptroller), ASD(C)
Director, Defense Research and Engineering (DDR&E)
Assistant Secretary of Defense (Production and Logistics) (ASD(PL)
ASD, Program Analysis and Evaluation (PA&E)
Director, Operational Test and Evaluation (OT&E)
Director, Program Integration (PI)
Chairs of DAB Committees as appropriate.

Significantly, of the DAB permanent members all but one, Vice Chairman of the JCS, are civilians. The civilians with the exceptions of the Director, PI, are presidential appointees (so-called non-career).

Typical issues spotlighted in the DAB proceedings include: affordability; cost growth, control and effectiveness; threshold breaches; joint-service squabbles; acquisition strategy; competition and second sourcing of contractors; production rates; test results; inventory objectives and interoperability.

The DAB and the Acquisition Life Cycle Process

The DAB process is the name given to the life cycle, decision-making process through which all major programs proceed from requirements and concept definition through production and deployment. Each Service and Defense Agency has its version of the life-cycle process which parallels the DAB process. Those parallel processes are used for managing smaller, less-than-major programs that do not require OSD decisions, and for reviewing major programs before DAB review.

Refer to Section Four for details of the life-cycle management process.

In the weapon system requirements process, historically DOD has had difficulty clearly and specifically defining just what capabilities are needed, and what tradeoffs must be made to achieve those capabilities. The 1986-87 restructuring of the DAB, particularly the role of the JCS Vice Chairman, has focused attention on outputs both for the service-unique and joint-service programs, and allow for a more cohesive and comprehensive management overview.

How OSD Manages the Acquisition System

Through three key officials, the USD(A), the Assistant Secretary of Defense (Comptroller), ASD(C), and the ASD, (Program Analysis and Evaluation,) (PA&E), OSD manages the defense acquisition system using these primary means:

—The decision-making process. This includes the DAB process (life-cycle process) and the Planning, Programming and Budgeting System (PPBS). These processes are detailed in Sections Four and Five.

—Information exchange. Usually at an informal setting, programs are briefed to OSD officials for either information (status) or for minor decisions or guidance. Sometimes this is accomplished simply by submission of documentation on the program. The material is reviewed, and the position of management subsequently is provided by OSD. Additionally, OSD's issuance of directives and regulations provides information on "how to."

—Program reviews. In a formal setting, programs are briefed to incur a decision or significant guidance. These reviews frequently occur between milestones in the life-cycle process when key points are reached.

Program Executive Officers

The position and function of the program executive officer (PEO) also was established in 1986, based on the Packard Commission report. The purpose is to establish a streamlined reporting chain where the program manager (PM) reports directly to a PEO who reports to the Service Acquisition Executive, without any intervening, reporting or oversight required. Refer to Figure 3.

Packard Commission

The 1985-86 President's Blue Ribbon Commission on Defense Management, chaired by David Packard, former Deputy SECDEF, primarily reviewed management of the Organization of the Joint Chiefs of Staff (OJCS) and defense acquisition. Reporting to the President in 1986, the Commission recommended creating a single position responsible for acquisition (the USD(A)) and the position of Vice Chairman of the JCS, who would oversee that activity's acquisition interests. The

PROGRAM MANAGER'S REPORTING CHAIN

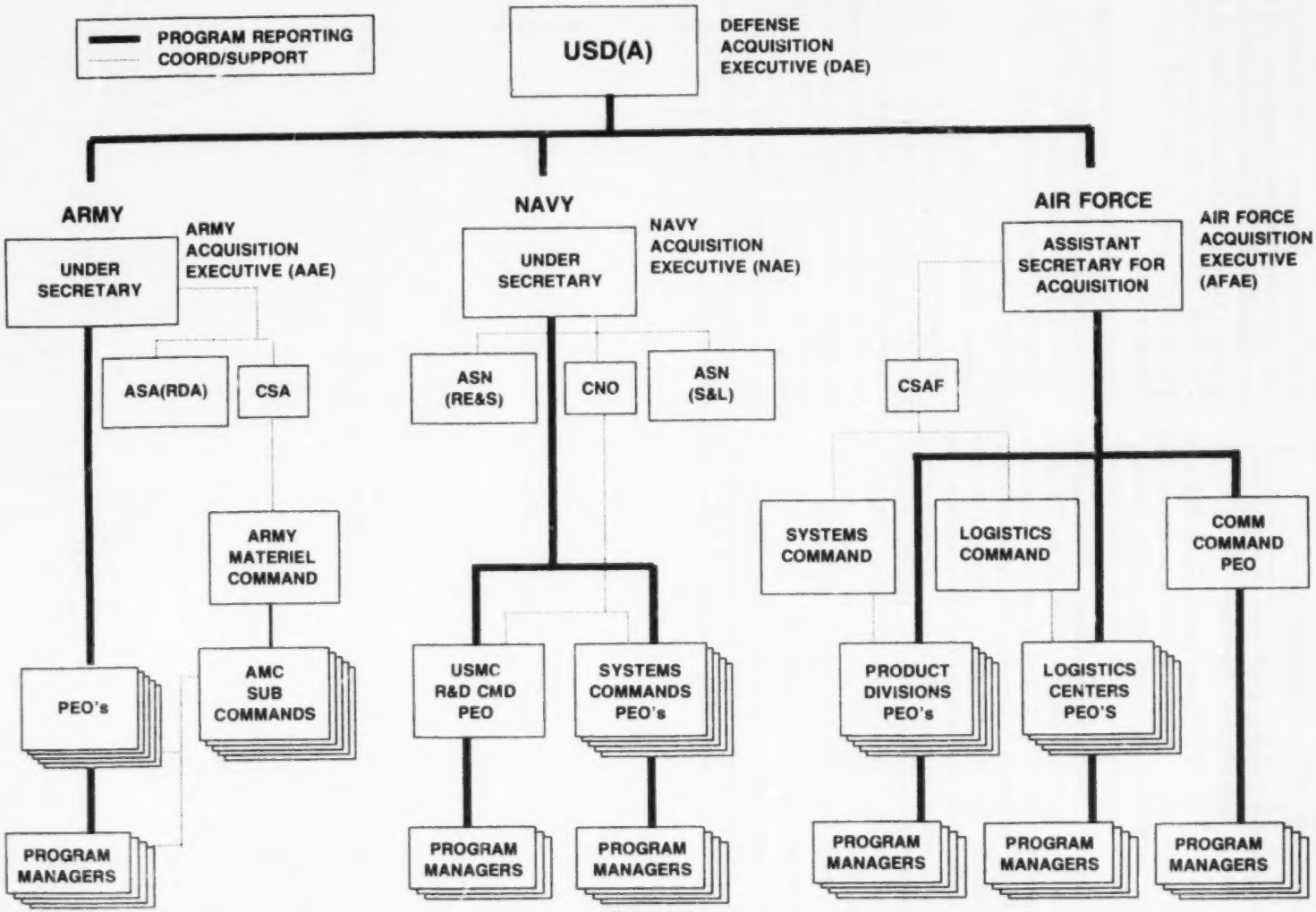


FIGURE 3

recommendations were approved by the President and incorporated into legislation, initiating a significant DOD reorganization.

Acquisition Processes of Services and Defense Agencies

The Services and Defense Agencies have their own regulations governing acquisition programs that are categorized as "other than major (other)," those administered within the Service/Agency.

For major programs, we will see in Sections Four and Five how they progress through the life-cycle management (DAB) and resource allocation (PPBS) processes, ultimately receiving approval from the SECDEF. For other programs, the same fundamental life-cycle system exists based on the DAB model. In general, the format essentially is identical; some names may be slightly changed, and documentation may be different. Whether a program is major or other, all must proceed through the PPBS for funding regardless.

Service Acquisition Executives

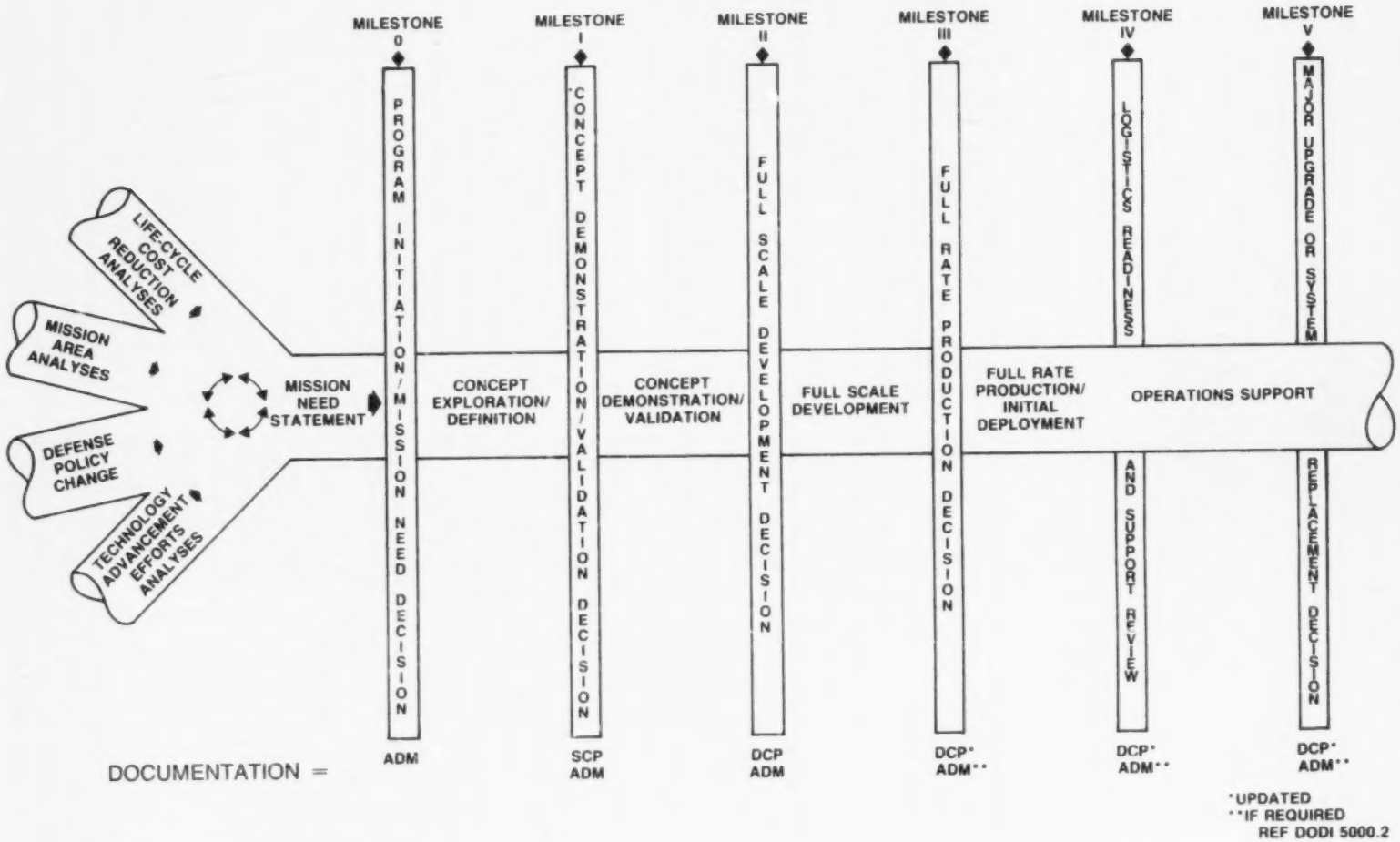
The senior official in the Services responsible for acquisition matters under the Service Secretary is the Service Acquisition Executive (SAE). The SAE in the Army is the Under Secretary of the Army; in the Navy (includes Marine Corps), it is the Under Secretary of the Navy; in the Air Force, it is the Assistant Secretary of the Air Force for Acquisition. The SAE role is similar to that of the DAE at the OSD level. Refer to Figure 3. The SAE reports to the Service Secretary administratively and to the DAE for program management.

Within this framework are managed both major programs destined for approval by the SECDEF and other programs retained by the Services. The difference is the process stops at the Service level for other programs.

Defense Agency Processes

The Agencies basically adhere to the DAB model for their acquisition programs with slight name changes, also headed by an acquisition executive. Nearly all Agency programs are managed within the Agency. Those significant large programs in command, control, and communications; intelligence; or nuclear matters could be raised to the level of SECDEF or the Office of the Secretary of Defense for guidance or decision outside the formal DAB structure on a case basis.

LIFE CYCLE OF A MAJOR DEFENSE ACQUISITION PROGRAM



ADM - Acquisition Decision Memorandum
SCP - Systems Concept Paper
DCP - Decision Coordinating Paper

FIGURE 4

4

LIFE CYCLE MANAGEMENT PROCESS

The Office of the Secretary of Defense (OSD) uses the Defense Acquisition Board (DAB) process to manage the life cycle of major acquisition programs. The Services and Defense Agencies have similar processes to manage other than major programs, which for all intent and purpose copy the DAB model. Refer to Figure 4.

The life-cycle process consists of decision points, or milestones, and periods of time, or phases. The life cycle of a weapon system program begins with planning before the program is approved or officially begins, and takes the program through research, development, production, deployment and support.

> In the DAB management process, common usuage of the term "life cycle" does not mean "cradle to grave." Rather, it implies stopping short of the "grave," or disposal of the system after its usefullness in the weapon inventory is completed. Even though the DAB session is contemplated at a decision point late in the process, actual disposal is not accomplished. In other words, the DAB process takes a system from birth only as far as advanced middle age.
>
> Other references to "life cycle" in the acquisition business, such as total life-cycle costs of developing, producing, deploying, supporting and disposing of a system, to include all costs associated with the system, literally speak of beginning-to-end. In practice, these are two related but separate definitions of "life cycle" which must be understood.

The Purpose of Life Cycle Management

Defense systems normally take from 8-12 years to complete. Completion means deploying, or fielding, the system so that a pre-designated number of operational forces have the system and the capability of using it, a point called initial operational capability (IOC).

During those 8-12 years, the system, called a program, is controlled through a series of steps involving periodic business and technical decisions. These decisions are scheduled into the overall strategy to acquire the system. They provide the program manager and senior officials in the Service /Agency, and OSD officials like the Under Secretary of Defense (Acquisition), USD(A), who is the Defense Acquisition Executive (DAE), the framework with which to review major programs, monitor and administer progress, identify problems and make corrections.

Most new systems follow the same formatted and predictable life cycle, and fit the model shown in Figure 4. This is particularly so if they employ high technology where high risk is treated with deliberation. However, if a new system essentially is an updated version of an existing one, or one where proven or available technology or systems are to be used (i.e., non-developmental items (NDI)), a program possibly could omit a milestone or phase or do multiple phases or technical functions simultaneously (concurrency) to accelerate the process.

Milestones

Milestone decisions for major programs are made by the Secretary of Defense (SECDEF) after program review by the Defense Acquisition Board and recommendation by the DAE.

There are six milestone decision points, O through V. Milestones IV and V were added in 1987 to reflect the most recent revision to DOD Directive 5000.1

Milestone 0. Program Initiation/Mission Need Decision. After submission of a Mission Need Statement (MNS) setting forth requirements needed to meet the threat, the DAB convenes for a MSO review. The DAB, through the DAE, recommends SECDEF validate the mission need by approving the MNS. The SECDEF makes the decision through issuance of the Acquisition Decision Memorandum (ADM). Permission is granted to proceed with Concept Exploration and Definition phase when funds are available.

Milestone I. Concept Demonstration/Validation decision. Progress to date is assessed and permission is granted to proceed to next phase, Concept Demonstration/Validation.

Milestone II. Full-Scale Development decision. Progress to date is assessed, and permission is given to proceed to next phase, Full-Scale Development, and if appropriate, low rate initial production (LRIP).

Milestone III. Full-Rate Prod uction decision. Progress to date is assessed, and permission is given to begin full-rate production and deploy the system.

Milestone IV. Operational Readiness and Support Review. Reviews deployed (fielded) programs 1-2 years after initial deployment to reexamine the areas of logistics readiness, sustainability, support objectives, training and manpower.

Milestone V. Major Upgrade or System Replacement Decision. Review occurs 5-10 years after initial deployment and encompasses modifications, upgrades, changes in threat, changes in technology and consideration of whether to start a major new program.

Phases

Pre-Initiation. Although not a formal phase of the life-cycle process, the Pre-Initiation period before Milestone O program approval consists of months or years of mission area analysis (MAA) and other evaluations and analyses to determine the requirements for a new start. The result of this effort is the MNS document which is submitted to the DAB for approval prior to or concurrent with the POM.

Concept Exploration/Definition (CE/D) Phase.

—Alternative concepts are identified and explored to satisfy the mission needs
—Information is acquired to select the best alternatives for system concept development
—An acquisition strategy is developed to guide the program emphasizing transition into demonstration/validation phase
—Cost, schedule, performance, supportability and producibility are evaluated
—Competition, including contractor teaming for development and production, and dual-sourcing for production
—Manpower requirements, concurrency, omitting phases and technological opportunities are evaluated
—Planning for test and evaluation (T&E), NATO rationalization, standardization and interoperability (RSI) and foreign military sales (FMS) are evaluated
—Optional approaches are considered, including technical risk funding, pre-planned product improvement (P3I), designing in reliability, government furnished equipment (GFE) and NDI.

The CE is a relatively short (1-2 years), intense period of activity focusing on selecting best alternative solutions for development. Uncertainty is high, and thorough planning is critical to program success. Innovativeness is essential. The phase's output is usually paper—studies, reports, recommendations. Normally, hardware is not built; models are optional.

Characteristically, there are numerous potential contractors bidding for the program, to be narrowed as the program progresses. Normally, no program manager (PM) is named until late in the phase, and the program management office (PMO) staff is small.

The Milestone I decision is made to give the PM or PMO cadre maximum flexibility and after consideration of the following factors:

—Program performance/schedule/alternative tradeoffs, where, for example, achievement of 100 percent of weapon reliability is traded off because of the extremely high additional cost it would take to design and build that capability
—Acquisition strategy appropriateness
—Prototyping of system or components
—Affordability and life-cycle costs
—Cooperative development opportunities
—Established goals and thresholds

—Established broad program cost schedule and operational effectiveness
—Joint-Service or foreign military sales (FMS) potential.

Concept Demonstration/Validation (CD/V) Phase

The purpose of CD/V is to verify the preliminary technical design, engineering and feasibility of competing concepts, and to select the best alternative systems for full-scale development. Usually, the system is not a complete ready-to-go system, but a series of subsystems yet to be assembled.

Key activities include demonstrating and validating candidate concepts and performing tradeoff analyses, risk analyses and laying the groundwork for production and support. Also:

—Update program thresholds—cost, schedule, performance supportability
—Begin design engineering
—Establish firm design to cost goals
—Begin development test and evaluation (DT&E), (controlled test environment), including breadboard, brassboard and subsystem, and possible operational T&E (under field conditions)
—Complete system analysis and develop support in absence of complete system
—Select the most technically feasible concept.

CD/V is usually 2-3 years. Needs of the PMO staff are growing, particularly for design engineers and logisticians. Staff expertise is assigned either to the PMO or is available from supporting functional matrix organizations. The number of contractors is reduced; typically, 2-3 are carried into the next phase to complete development and compete for ultimate production. The output of CD/V are prototypes and components of the ultimate system.

CD/V success depends upon acquisition strategy, reducing risk, adequacy of prototypes and adequacy of contractor-furnished data. The bottom-line issue that top management must resolve: Is this program really what we want to do the job?

The Milestone II decision is a commitment to complete engineering, development and prepare for production. If warranted, the LRIP decision may be made at MS II. The decision is made after addressing:

—Affordability and updated life-cycle costs
—Cost, schedule and peformance thresholds
—Acquisition strategy, including competition
—Established manpower, personnel and training goals
—Updated Test and Evaluation Master Plan (TEMP) and Integrated Logistic Support Plan (ILSP)
—Updated threat evaluation
—Identification of production/manufacturing risks.

The program will be approved for production only if test requirements are met. Other activities include:

—Prepare for deployment (fielding) of the first systems, including training resources, delivery schedule and operational units receiving systems
—Readiness for production, including manufacturing processes, resources, industrial base, production design and producibility
—Competition
—Tradeoff analyses
—Complete integrated logistic support planning, begin execution
—Plan for post-production support
—Foreign military sales
—Configuration management (control of changes).

Full-Scale Development (FSD) Phase

The purpose of the full-scale development phase is to complete sub-system design and development, achieve readiness for production, reduce risk to production, and complete plans for support of the selected system.

Key activities include transitioning from development to production, system engineering (making sure all activities and disciplines come together properly) and T&E—both development (DT&E) and operational (OT&E). The user — operating forces — who ultimately will field the system becomes increasingly involved, particularly regarding planning for deployment.

As a general rule, production on large systems begins slowly during late FSD at a low rate, called LRIP (low-rate initial production). The LRIP tests the manufacturing process and allows debugging of early systems before full production. The PMO has grown by adding expertise in the test and evaluation, manufacturing, quality and logistics disciplines. Typically, two contractors now compete for all or shared production units.

The output of FSD usually is a completed system ready for production.

FSD perhaps is the most complex, difficult phase (3-5 years). The Milestone III decision is made after addressing diverse activities taking place during FSD, including:

—The heavy influence of test results
—Mounting pressures to enter production and field the first systems
—Resolution of design problems
—Whether the system operable and supportable
—Whether the manufacturing process is ready.

Full-Rate Production/Initial Deployment (P/D)

The purpose of the Full-Rate Production/Initial Deployment phase is to produce authorized quantities on schedule and within budget, achieve a high level of operational readiness for the deployed system and meet the established IOC date.

The continuing schedule objective has been to meet IOC. Driven by the threat, IOC has been determined as when enough systems are deployed in a predetermined number of the operating forces so the Service has the capability to "warfight" with this system. Subsequently, when virtually all systems scheduled for deployment are deployed, the system then reaches full operational capability.

Key activities include:

—Production Acceptance T&E (PAT&E)
—Manufacture the system, support equipment and spares
—Deploy the system
—Continue development T&E of changes generated by user feedback
—Continue follow-on T&E (FOT&E) to improve system
—Operate and support the system
—Train users
—Pursue product improvement program
—Contract monitoring and contractor surveillance
—Value engineering.

The PM and PMO usually operate until IOC, perhaps longer depending upon the situation, especially if the support system is being established. Eventually, the program usually is transferred to another office for management of the remainder of the life cycle (including disposal). Normally, 1-2 contractors produce the end-item for as long as the production run lasts.

The PD is characterized by a shifting emphasis from engineering design and development to producing, fielding and supporting the system. Operational units are established and the system becomes part of the Service's weapon inventory capable of meeting the threat. While the period of expected use may be estimated (i.e., a surface ship sonar for 15 years), the production period may be shorter (closes at 10 years), with spare-parts manufacture continuing,

Operations Support (OS) Phase

The operations support phase accounts for the system in use and in inventory. The phase begins at initial deployment. About 1-2 years after initial deployment, a Milestone IV review is conducted. The milestone reviews the system's operational readiness for use and whether its logistics support system is established and open for business; i.e., if the network of training facilities, supply depots, maintenance activities, requisitioning procedures, etc., and the anticipated spares, technical manuals, test equipment, etc., are available. The milestone reviews affordability and life-cycle costs now that the system has been in service use.

Feedback from users in the field to the PM or management office is essential during the OS phase. Feedback generates product improvements, alterations and plans for future modifications or follow-on systems.

The Milestone V review occurs about 5-10 years after initial deplpyment. It examines system readiness to meet mission goals, and the need to upgrade or modify the system to meet current or future requirements, extend its life or develop a follow-on, next-generation system. This is manifested by the system's age and the changes in threat and technology. In some respects, this milestone decision reflects similar planning and evaluation taking place in the pre-initiation period for a new start, thus giving the life-"cycle" process a life-"circle" appearance. Consequently, the user is heavily involved in this phase.

5

RESOURCE ALLOCATION PROCESS

Resources for Department of Defense (DOD) activities, whether weapon systems or personnel costs, are provided through the resource allocation process. Literally, resources means dollars (funds), material, people, facilities and equipment. Generally speaking, resources mean dollars, for without money other elements of the term lack vitality. The phases of the process are:

Phase 1 - Planning, Programming and Budgeting System (PPBS)
Phase 2 - Enactment
Phase 3 - Apportionment
Phase 4 - Execution

From the standpoint of developing, producing, fielding and supporting weapon systems, the PPBS is the center of attention in the Pentagon and other DOD headquarters activities, while program managers are equally concerned with execution.

Planning, Programming and Budgeting System

The PPBS is the official management system which produces DOD's portion of the President's budget in a well conceived, justifiable manner.

Decisions associated with each of the three phases (planning, programming, budgeting) of the PPBS are summarized and recorded in the Five Year Defense Program (FYDP). The FYDP reflects requirements for outyears, or years beyond the next budget year, based on internal planning to meet mission needs for national defense. It represents programs approved by the Secretary of Defense (SECDEF). Refer to Figure 5, which depicts the two structures, Major Force Programs and Appropriations, around which the FYDP is built. Each Service and Defense Agency program is a subset of the FYDP and can be identified in either structure.

The purpose of the PPBS is to: (1) complete the defense planning phase, which in many cases began years before, (2) initiate and complete the programming phase, where plans are prioritized and matched with expected funds, and (3) result in a DOD budget for presentation to the Congress as part of the President's budget. Refer to Figure 6.

The PPBS as a process has remained relatively unchanged since its beginning in 1962, but its flexibility to respond to document and schedule changes reflecting decisions of the President and the Secretary of Defense (SECDEF) is its strength. The Assistant Secretary of Defense (Comptroller), ASD(C), administers the PPBS within DOD. The ASD(C) counterparts have the same responsibilities within the Services and Defense Agencies.

Until 1987, the PPBS was an annual process through which DOD prepared its annual budget. Beginning in 1986 with submission of the first 2-year defense budget, for fiscal years 1988-89, the PPBS became a biennial procedure. In common usage, the term PPBS generally implies the resource allocation process.

The Defense Resources Board

The Defense Resources Board (DRB) is the principal OSD management review board in the PPBS. It is tantamount to the DAB in the acquisition life-cycle process, and, in fact, shares many of the same members, but is separate from the DAB process.

Whereas the DAB reviews only acquisition programs, the DRB reviews all elements of the Five

Year Defense Program, from acquisition to numbers of men and women in uniform for a given year, to construction of port facilities in a friendly nation and the number of authorized carrier battle groups. Whereas the DAB meets year-round on call, the DRB's work usually squeezes into the summer months in PPBS (even) years.

The core membership of the DRB is the same as the DAB, except the Deputy Secretary of Defense (DEPSECDEF) is added as Chairman, and the Service Secretaries and several other top officials of the Office of the SECDEF (OSD) are added.

Because the DAB and PPBS processes work independently of each other, proceeding in the same direction on close, but different tracks, it is possible a program will be approved to enter the next phase in the life cycle but be budgeted for fewer funds than required for that phase. Attempts to avoid this possibility center around the core membership and constant communications by top officials and their staffs to keep abreast of program issues.

The Defense Guidance and Program Objectives Memoranda

The DRB source documents are the Defense Guidance (DG) and Service/Defense Agency Program Objectives Memoranda (POMs).

—The DG is issued every other (odd) year in November by the SECDEF. The DG stipulates DOD missions and responsibilities and thereby

FIVE YEAR DEFENSE PROGRAM (FYDP) STRUCTURE

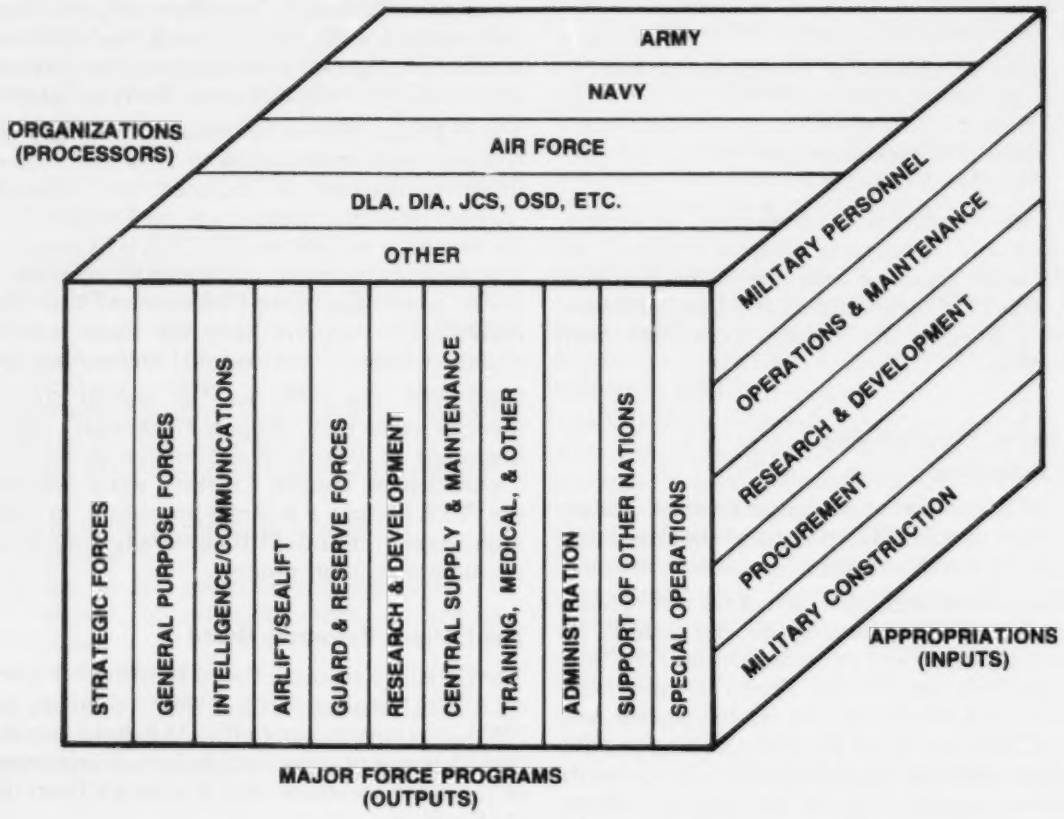


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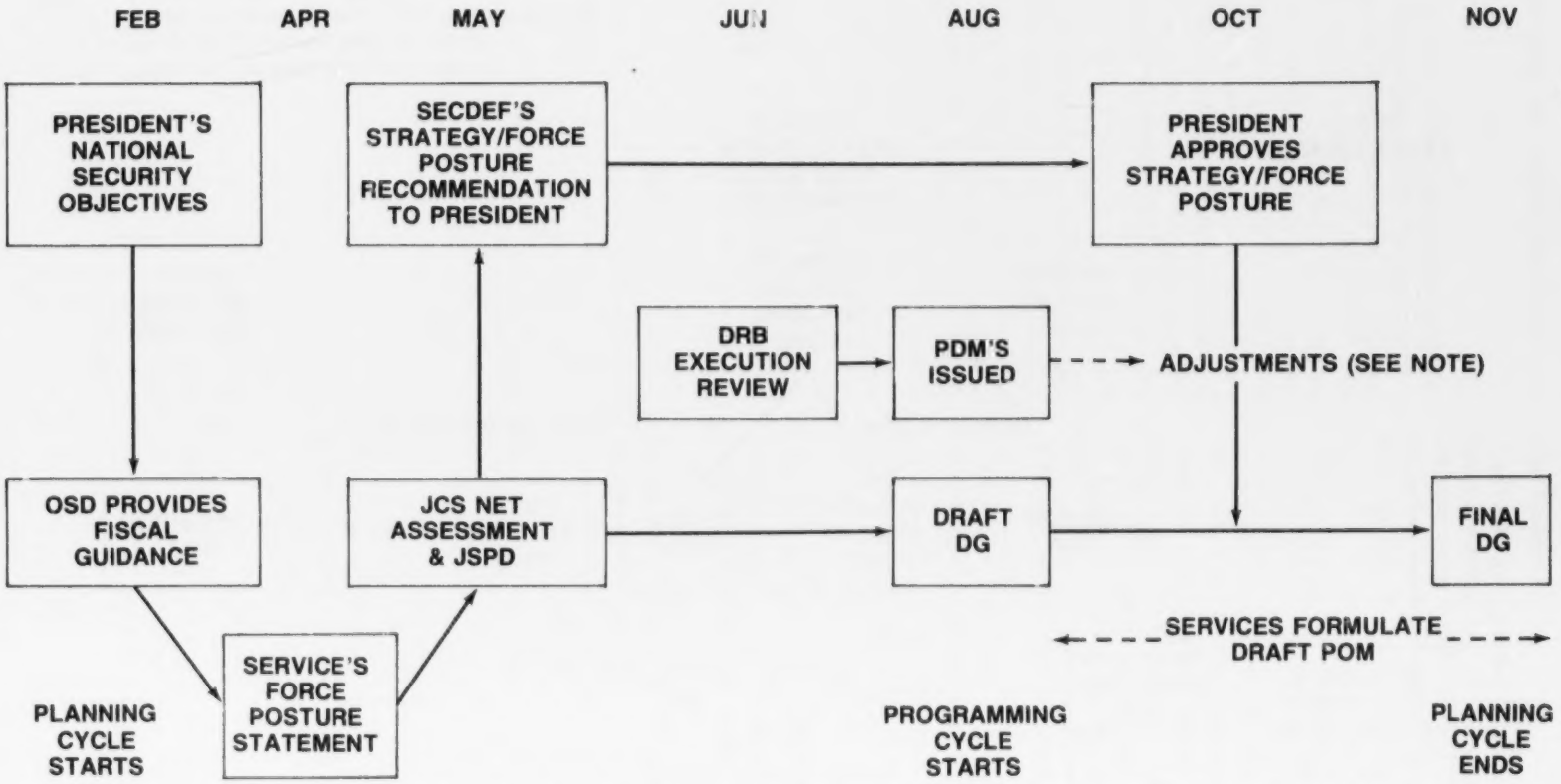
FIGURE 5

PLANNING, PROGRAMMING, AND BUDGETING SYSTEM (PPBS) CYCLE

PLANNING/PROGRAMMING CYCLE (ODD NUMBERED YEARS)

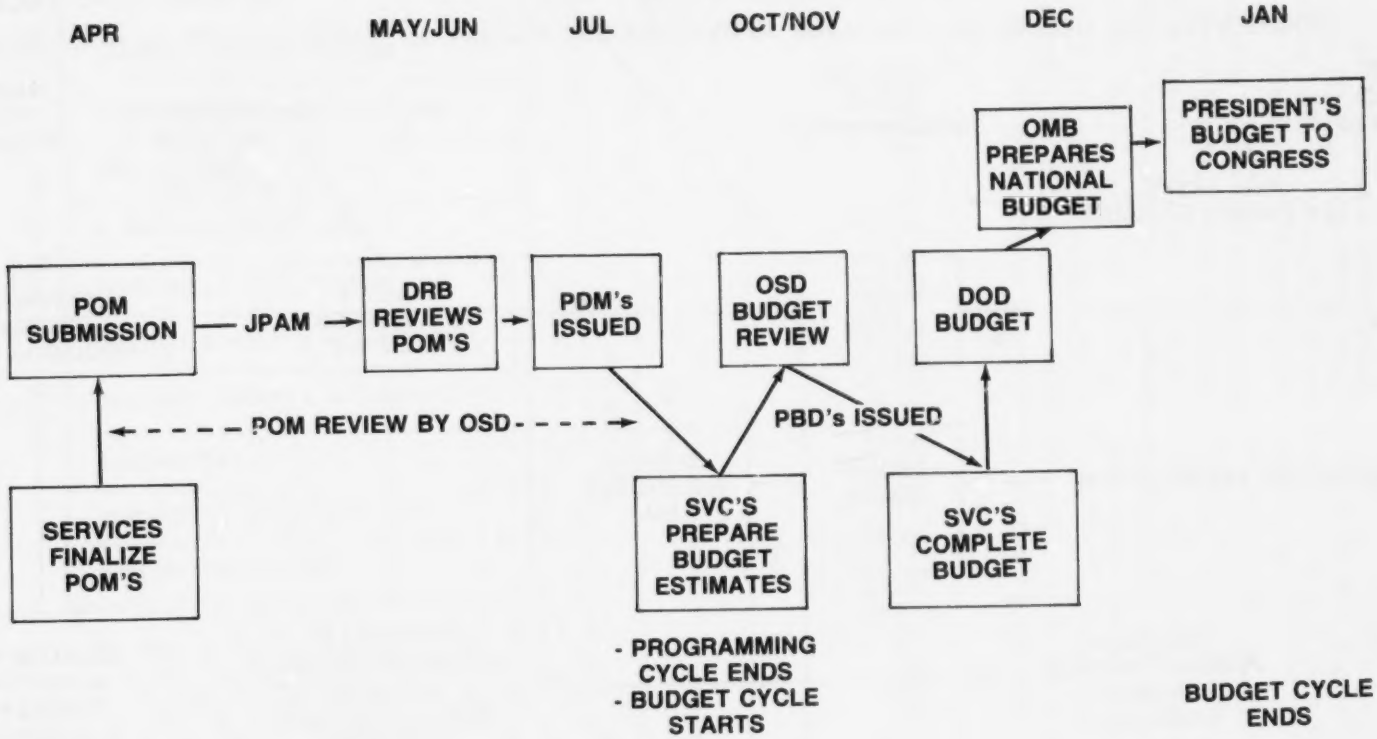


NOTE: EXECUTION REVIEW MAY ADJUST DG AND THE SECOND YEAR OF PREVIOUSLY SUBMITTED TWO YEAR BUDGET.

JCS = JOINT CHIEFS OF STAFF
OSD = OFFICE OF THE SECRETARY OF DEFENSE
JSPD = JOINT STRATEGIC PLANNING DOCUMENT
DRB = DEFENSE RESOURCES BOARD
PDM = PROGRAM DECISION MEMORANDUM
DG = DEFENSE GUIDANCE
POM = PROGRAM OBJECTIVE MEMORANDUM
SERVICES = MILITARY COMPONENTS (e.g., ARMY)

FIGURE 6(a)

PLANNING, PROGRAMMING, AND BUDGETING SYSTEM (PPBS) CYCLE
PROGRAM/BUDGET CYCLE (EVEN NUMBERED YEARS)



OSD = Office of the Secretary of Defense
POM = Program Objective Memorandum
JPAM = Joint Program Assessment Memorandum
DRB = Defense Resources Board
PDM = Program Decision Memorandum
PBD = Program Budget Decision
OMB = Office of Management and Budget

FIGURE 6(b)

becomes the basis on which the POMs are formulated.

—The POM is the principal programming document which details how a Service/Agency proposes to respond to assignments in the DG and satisfy its assigned functions of the FYDP. It is submitted April 1 by the Services and Defense Agencies to the Office of the Secretary of Defense (Assistant Secretary (Comptroller)). The POM shows its programmed needs for 2 years hence (i.e., in FY 1988, POM 1990-1994 is formulated), including manpower, force levels, procurement, facilities, personnel issues and research and development.

The DRB evaluates all POMs at the same time, compares them with available and anticipated resources, and recommends decisions in the form of Program Decision Memoranda (PDM) to be signed by the SECDEF. Issuance of the PDM in mid-to-late summer signals the end of the programming phase.

The Budget

The POM as approved by the PDM becomes the basis for preparing the Service/Agency budget estimate submittal in the fall. The budget review, including hearings with the Services/Agencies, is held by the OSD Comptroller and OMB.

After review in late fall, program budget decisions (PBDs), which represent OSD opinion of each budget submittal's ability to be executed efficiently, are issued by the Comptroller. Then, the Services/Agencies prepare final budgets. Together, these become the DOD budget, which is submitted to OMB in early winter. After OMB review, the DOD budget becomes part of the President's budget for the Federal Government, submitted to the Congress in January. Thus, the PPBS cycle is completed and the enactment process begins.

Comparing the Two Acquisition Management Systems

A comparison of the DAB process and the resource allocation process shows:

SYSTEM	OSD FOCAL POINT	DRIVER	OUTPUT
Life-cycle (DAB) process	USD(A)	Milestones, program phases	Proceed to next phase
Resourse allocation (PPBS) process	ASD(C)	Calendar, biennial	Funds

6

BUSINESS, FINANCIAL AND TECHNICAL ASPECTS OF SYSTEMS ACQUISITION

Management of the systems acquisition process involves not only mechanisms for decision-making and funding and responding to congressional oversight, but also daily tasks of managing business and technical aspects of the program.

The acquisition program manager (PM) must attend frequent sporadic, external influences of oversight and funding, many of which are beyond PM direct control. However, the conduct of business, financial and technical functions, which are the gears of the acquisition program, are more readily identified, planned and accommodated.

Business and Financial Functions

The procurement contract for goods and services is the heart of the acquisition process. Business and financial functions, the latter including management of acquisition funds, are built around contracting and include:

—Acquisition plan (checklist) and acquisition strategy road map
—Contract types, award and monitoring
—Cost estimating
—Formulation of input for the Program Objectives Memorandum (POM), the budget and other programmatic or financial documentation of the Planning, Programming and Budgeting System (PPBS)
—Request for Proposal preparation
—Source selection
—Contractor surveillance
—Program Office administration and personnel
—Budget execution (paying bills)
—Technical data rights
—Total quality management.

The acquisition planning phase of the contracting process includes the system requirement (need) determination, requirement definition and specification, and procurement request. Once potential contractors are notified through the procurement request, the source-selection process moves through solicitation, evaluation of bids, negotiation and contract award. The contract is then administered and monitored for compliance to ensure product delivery as agreed. Once the contract's term or conditions are met, the contact is terminated, modified or extended.

Technical Management Functions

Technical management is a broad term including the management of a totally integrated effort of system engineering, test and evaluation (T&E), production and logistics support over the system life cycle. Its goal is timely deployment of an effective system, sustaining it, and satisfying the need at an affordable cost. Technical management includes, but is not limited to:

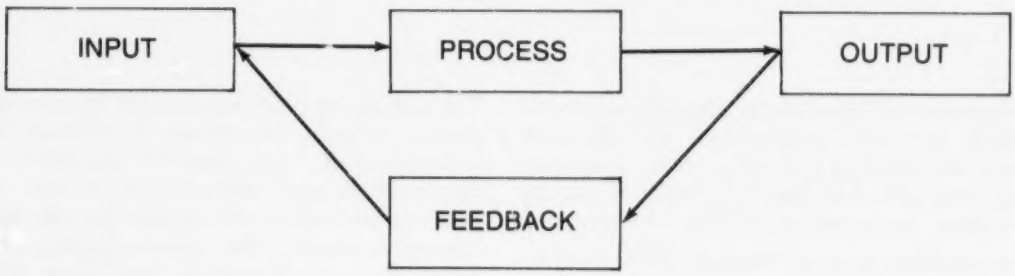
—System/product definition process (establishing baseline)
—Design engineering
—Systems engineering (putting pieces together)
—Computer resources
—Software management
—Integrated logistics support
—Development T&E
—Operational T&E
—Reliability, availability and maintainability
—Product improvements
—Transition from development to production
—Total quality management
—Standardization and specifications
—Configuration management

—Producibility
—Manufacturing process and controls
—System or product disposal
—Pre-planned product improvements
—Total quality management.

Technical management involves balancing a system's cost, schedule, effectiveness, and supportability. Cost includes funds required to design, develop, produce, operate and support and dispose of a system. Schedule includes the time it takes to design, develop, test, produce and deploy a fully supported system.

Effectiveness is the degree to which a system can be expected to achieve a set of specific mission requirements.

Technical management, then, is an input/output process. Input is the need or requirement. The process is how the technical activities are managed. Output is the end-item. Linking this is a feedback loop which improves the end-item based on customer, or user, comments and recommendations.



7

PROGRAM MANAGEMENT IN DEFENSE ACQUISITION

Fundamental Department of Defense (DOD) policy requires that a systems acquisition program be directed by a responsible manager using the concept of program management. The terms "program" and "project" are used interchangeably. Here they are the same.

The role of the program manager (PM), or project manager, is to direct development, production and initial deployment (as a minimum) of a system. This must be done within limits of cost, schedule, performance and logistics support objectives approved by the Secretary of Defense (SECDEF), head of the Military Department (Service) or Defense Agency, or designee.

> The PM role, then, is to be the agent of the Service or Defense Agency in the management of a weapon system acquisition program within the defense acquisition process.

The Concept of Program Management

The concept of program management is defined as:

> A special management approach used to provide centralized authority and responsibility (on a team or task force basis) for the priority accomplishments of a specified project or task. The task critical to the organization's success involves the timely integration of divergent specialties and activities into coherent, coordinated management.

Further stated, program management applies to three significant acquisition situations. First, it represents diverse interests and points of view. Second, it facilitates tailoring the management system and techniques to the uniqueness of the program. Third, it represents integration of a complex system of differing but related functional and discipline areas which must eventually work together to achieve program goals.

The Program Manager's Perspective

The effective PM has the advantage of a large perspective of the program and the interrelationships among its elements.

—The PM is a leader and manager, not primarily a "doer"
—The PM understands the requirements, environment, organizations, activities, constraints, motivations impacting the program
—The PM knows and is capable of working within the established framework, managerial systems and processes that provide funding and other decisions for the program to proceed
—As a leader, the PM comprehends and uses basic skills of management—planning, organizing, directing and controlling—so people and systems harmonize to produce the desired results
—The PM coordinates the work of defense industry contractors, consultants, in-house engineers and logisticians, contracting officers, and others, whether assigned directly to the program office or supporting it through a matrixed assignment format
—The PM can be a principal advocate for the program, and constantly builds support for the program and monitors reactions and perceptions helping or impeding progress
—The PM has to serve both the military needs of the user in the field and the priority and funding constraints imposed by managers in the Pentagon and Service/Defense Agency headquarters, thus becoming a lightening rod for both.

Why Program Management Is Used in Defense Acquisition

Program management provides a single point of contact as the major force for directing the system through evolution, development, production and deployment. The PM, while perhaps being unable to control the environment, nevertheless has management authority over business and technical aspects of a specifically defined program. The PM has only one responsibility—managing that program. Accountability is clearer, and results should be more easily quantifiable and measurable.

For defense acquisition programs, industry also uses program management in a manner and format similar to that used within DOD. Often, a contractor will staff and operate the program office to correspond to that employed by the military program office for which they are performing the contractual effort.